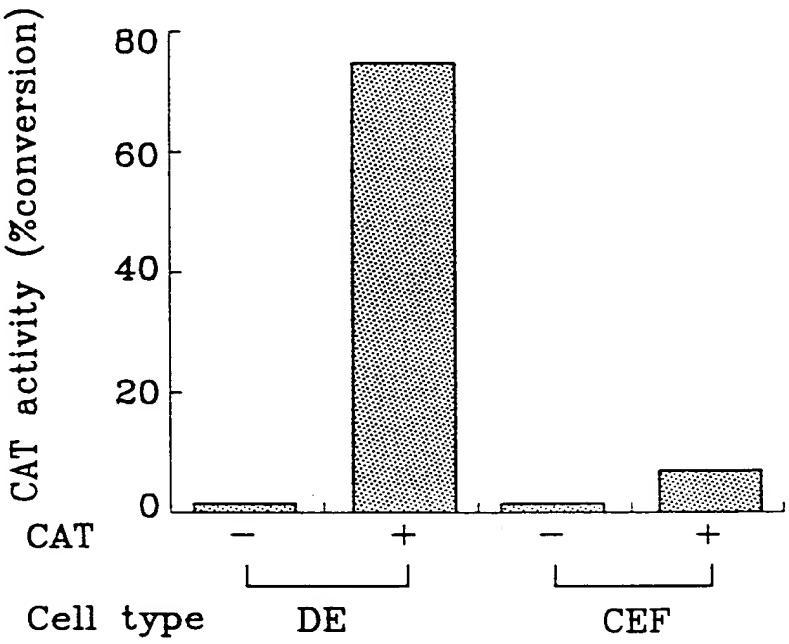
FIG.1



09529042 "09/05/96"

FIG.2

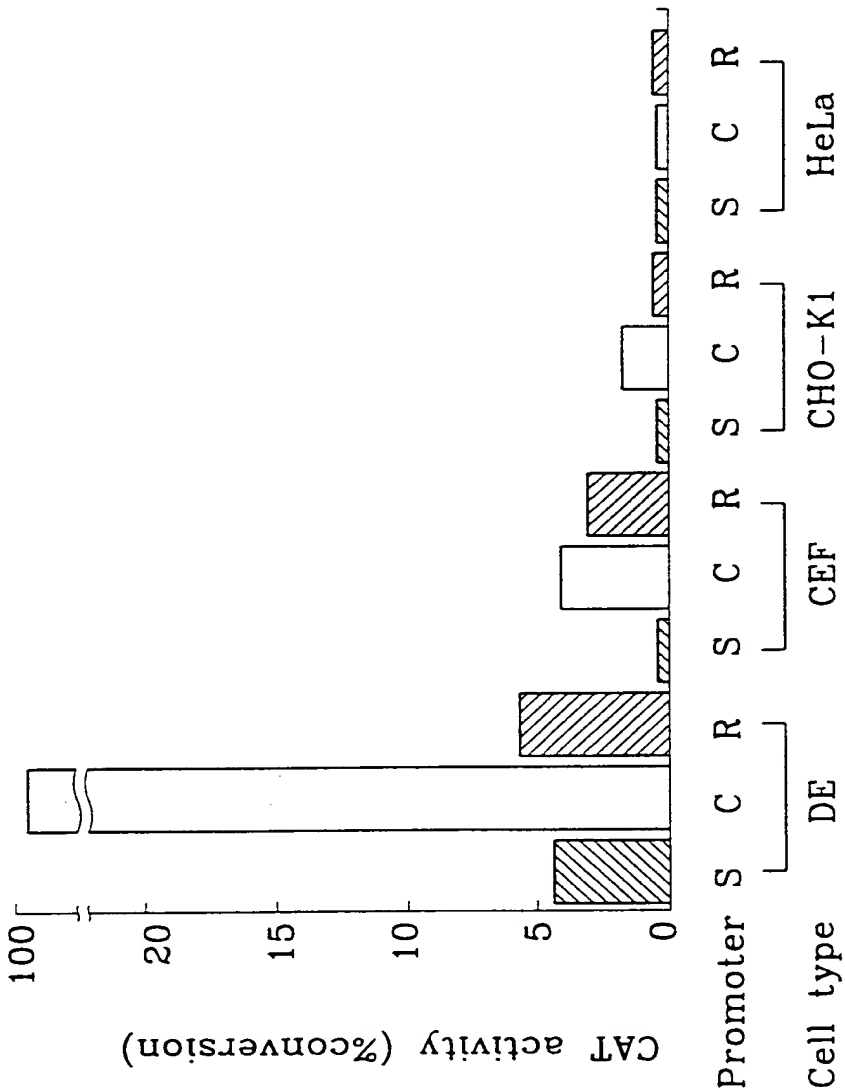

CAT activity (%conversion)
100
20
15
10
5
0
Promoter S C R S C R S C R S C R
Cell type DE CEF CHO-K1 HeLa

FIG.3

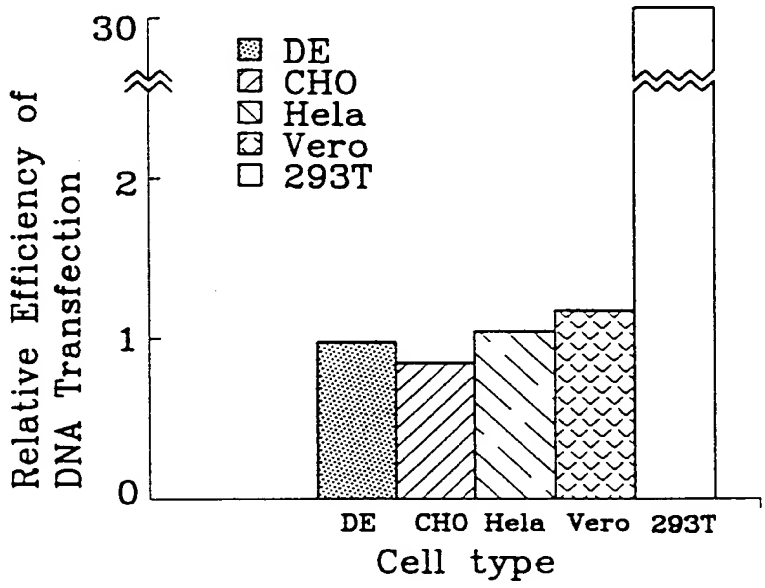


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FIG.4

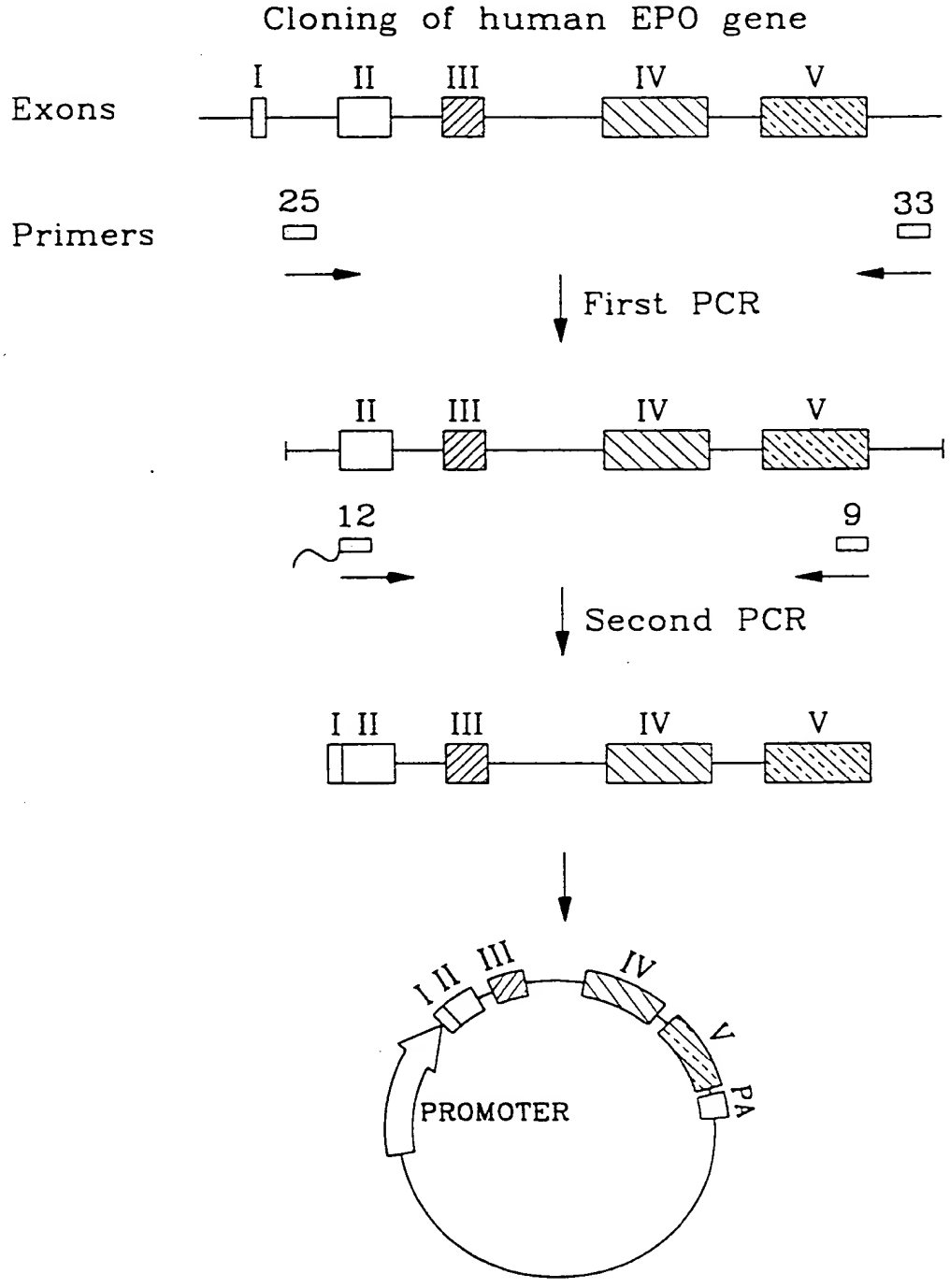

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FIG.5A

```
AM      ATGGGGGTGCACGAATGTCCTGCCTGGCTGTGGCTTCTCCTGTCCCTGCT    50
GI      ATGGGGGTGCACGAATGTCCTGCCTGGCTGTGGCTTCTCCTGTCCCTGCT    50
SY      ATGGGGGTGCACGAATGTCCTGCCTGGCTGTGGCTTCTCCTGTCCCTGCT    50
JM      ATGGGGGTGCACGAATGTCCTGCCTGGCTGTGGCTTCTCCTGTCCCTGCT    50
SH      ATGGGGGTGCACGAATGTCCTGCCTGGCTGTGGCTTCTCCTGTCCCTGCT    50
HE      ATGGGGGTGCACGAATGTCCTGCCTGGCTGTGGCTTCTCCTGTCCCTGCT    50
        **************************************************

AM      GTCGCTCCCTCTGGGCCTCCCAGTCCTGGGCGCCCCACCACGCCTCATCT   100
GI      GTCGCTCCCTCTGGGCCTCCCAGTCCTGGGCGCCCCACCACGCCTCATCT   100
SY      GTCGCTCCCTCTGGGCCTCCCAGTCCTGGGCGCCCCACCACGCCTCATCT   100
JM      GTCGCTCCCTCTGGGCCTCCCAGTCCTGGGCGCCCCACCACGCCTCATCT   100
SH      GTCGCTCCCTCTGGGCCTCCCAGTCCTGGGCGCCCCACCACGCCTCATCT   100
HE      GTCGCTCCCTCTGGGCCTCCCAGTCCTGGGCGCCCCACCACGCCTCATCT   100
        **************************************************

AM      GTGACAGCCGAGTCCTGGAGAGGTACCTCTTGGAGGCCAAGGAGGCCGAG   150
GI      GTGACAGCCGAGTCCTGGAGAGGTACCTCTTGGAGGCCAAGGAGGCCGAG   150
SY      GTGACAGCCGAGTCCTGGAGAGGTACCTCTTGGAGGCCAAGGAGGCCGAG   150
JM      GTGACAGCCGAGTCCTGGAGAGGTACCTCTTGGAGGCCAAGGAGGCCGAG   150
SH      GTGACAGACGAGTCCTGGAGAGGTACCTCTTGGAGGCCAAGGAGGCCGAG   150
HE      GTGACAGCCGAGTCCTGGAGAGGTACCTCTTGGAGGCCAAGGAGGCCGAG   150
        ******************************************************

AM      AATATCACGGTGAGACCCCTTCCCCAGCACATTCCACAGAACTCACGCTC   200
GI      AATATCACGGTGAGACCCCTTCCCCAGCACATTCCACAGAACTCACGCTC   200
SY      AATATCACGGTGAGACCCCTTCCCCAGCACATTCCACAGAACTCACGCTC   200
JM      AATATCACGGTGAGACCCCTTCCCCAGCACATTCCACAGAACTCACGCTC   200
SH      AATATCACGGTGAGACCCCTTCCCCAGCACATTCCACAGAACTCACGCTC   200
HE      AATATCACGGTGAGACCCCTTCCCCAGCACATTCCACAGAACTCACGCTC   200
        **************************************************
```

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FIG.5B

```
AM      AGGGCTTCAGGG-AACTCCTCCCAG-ATCCAGGAACCTGGCACTTGGTTT  248
GI      AGGGCTTCAGGG-AACTCCTCCCAG-ATCCAGGAACCTGGCACTTGGTTT  248
SY      AGGGCTTCAGGG-AACTCCTCCCAG-ATCCAGGAACCTGGCACTTGGTTT  248
JM      AGGGCTTCAGGG-AACTCCTCCCAG-ATCCAGGAACCTGGCACTTGGTTT  248
SH      AGGGCTTCAGGG-AACTCCTCCCAG-ATCCAGGAACCTGGCACTTGGTTT  248
HE      AGGGCTTCAGGGGAACTCCTCCCAGGATCCAGGAACCTGGCACTTGGTTT  250
        ***********|***********|************************

AM      GGGGTGGAGTTGGGAAGCTAGACACTGCCCCCCTACATAAGAATAAGTCT  298
GI      GGGGTGGAGTTGGGAAGCTAGACACTGCCCCCCTACATAAGAATAAGTCT  298
SY      GGGGTGGAGTTGGGAAGCTAGACACTGCCCCCCTACATAAGAATAAGTCT  298
JM      GGGGTGGAGTTGGGAAGCTAGACACTGCCCCCCTACATAAGAATAAGTCT  298
SH      GGGGTGGAGTTGGGAAGCTAGACACTGCCCCCCTACATAAGAATAAGTCT  298
HE      GGGGTGGAGTTGGGAAGCTAGACACTGCCCCCCTACATAAGAATAAGTCT  300
        **************************************************

AM      GGTGGCCCCAAACCATACCTGGAAACTAGGCAAGGAGCAAAGCCAGCAGA  348
GI      GGTGGCCCCAAACCATACCTGGAAACTAGGCAAGGAGCAAAGCCAGCAGA  348
SY      GGTGGCCCCAAACCATACCTGGAAACTAGGCAAGGAGCAAAGCCAGCAGA  348
JM      GGTGGCCCCAAACCATACCTGGAAACTAGGCAAGGAGCAAAGCCAGCAGA  348
SH      GGTGGCCCCAAACCATACCTGGAAACTAGGCAAGGAGCAAAGCCAGCAGA  348
HE      GGTGGCCCCAAACCATACCTGGAAACTAGGCAAGGAGCAAAGCCAGCAGA  350
        **************************************************

AM      TCCTACGGCCTGTGGGCCAGGGCCAG-AGCCTTCAGGGACCCTTGACTCC  397
GI      TCCTAC-GCCTGTGG-CCAGGGCCAG-AGCCTTCAGGGACCCTTGACTCC  395
SY      TCCTACGGCCTGTGGGCCAGGGCCAA-AACCTTCAGGGACCCTTGACTCC  397
JM      TCCTACGGCCTGTGGGCCAGGGCCAGGAGCCTTCAGGGACCCTTGACTCC  398
SH      TCCTACGGCCTGTGGGCCAGGGGCA-GAGCCTTCAGGGACCCTTGACTCC  397
HE      TCCTACGGCCTGTGGGCCAGGGCCA-GAGCCTTCAGGGACCCTTGACTCC  399
        ******|********|*******|**|*|**********************
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FIG.5C

```
AM      CCGGGCTGTGTGTGCATTTTCAGACGGGCTGTGCTGAACACTGCAGCTTGAAT  447
GI      CCGGGCTGTGTGTGCATTTTCAGACGGGCTGTGCTGAACACTGCAGCTTGAAT  445
SY      CCGGGCTGTTTTGCATTTTCAGACGGGCTGTGCTGAACACTGCAGCTTGAAT  447
JM      CCGGGCTGTGTGTGCATTTTCAGAAGGGCTGTGCTGAACACTGCAGCTTGAAT  448
SH      CCGGGCTGTGTGTGCATTTTCAGACGGGCTGTGCTGAACACTGCAGCTTGAAT  447
HE      CCGGGCTGTGTGTGCATTTCCAGACGGGCTGTGCTGAACACTGCAGCTTGAAT  449
        *********_*******_****_****************************

AM      GAGAATATCACTGTCCCAGACACCAAAGTTAATTTCTATGCCTGGAAGAG    497
GI      GAGAATATCACTGTCCCAGACACCAAAGTTAATTTCTATGCCTGGAAGAG    495
SY      GAAAATATCACTGTCCCAGACACCAAAGTTAATTTCTATGCCTGGAAGAG    497
JM      GAGAATATCACTGTCCCAGACACCAAAGTTAATTTCTATGCCTGGAAGAG    498
SH      GAGAATATCACTGTCCCAGACACCAAAGTTAATTTCTATGCCTGGAAGAG    497
HE      GAGAATATCACTGTCCCAGACACCAAAGTTAATTTCTATGCCTGGAAGAG    499
        **_************************************************

AM      GATGGAGGTGAGTTCCTTTTTTTTTTTTTTTCCTTTCTTTTGGAGAATCT   547
GI      GATGGAGGTGAGTTCCTTTTTTTTTTTTTTTCCTTTCTTTTGGAGAATCT   545
SY      GATGGAGGTGAGTTCCTTTTTTTTTTTTTTTCCTTTCTTTTGGAGAATCT   547
JM      GATGGAGGTGAGTTCCTTTTTTTTTTTTTTTCCTTTCTTTTGGAGAATCT   548
SH      GATGGAGGTGAGTTCCTTTTTTTTTTTT--TCCTTTCTTTTGGAGAATCT   545
HE      GATGGAGGTGAGTTCCTTTTTTTTTTTTTTTCCTTTCTTTTGGAGAATCT   549
        ****************************_********************

AM      CATTTGCGAGCCTGATTTTTGGATGAAAGGGAGAAATGATCGGGGGAAAGGT  597
GI      CATTTGCGAGCCTGATTTTTGGATGAAAGGGAGAAATGATCGAGGGAAAGGT  595
SY      CATTTGCGAGCCTGATTTTTGGATGAAAGGGAGAAATGATCGAGGGAAAGGT  597
JM      CATTTGCGAGCCTGATTTTTGGATGAAAGGGAGAGTGATCGAGGGAAAGGT  598
SH      CATTTGCGAGCCTGATTTTTGGATGAAAGGGAGAAATGATCGAGGGAAAGGT  595
HE      CATTTGCGAGCCTGATTTTGGGATGAAAGGGAGAAATGATCGAGGGAAAGGT  599
        ******************_**************_*******_*********
```

FIG.5D

```
AM      AAAATGGAGCAGCAGAGATGAGGCTGCCTGGGCGCAGAGGCTCACGTCTA  647
GI      AAAATGGAGCAGCAGAGATGAGGCTGCCTGGGCGCAGAGGCTCACGTCTA  645
SY      AAAATGGAGCAGCAGAGATGAGGCTGCCTGGGCGCAGAGGCTCACGTCTA  647
JM      AAAATGGAGCAGCAGAGATGAGGCTGCCTGGGCGCAGAGGCTCACGTCTA  648
SH      AAAATGGAGCAGCAGAGATGAGGCTGCCTGGGCGCAGAGGCTCACGTCTA  645
HE      AAAATGGAGCAGCAGAGATGAGGCTGCCTGGGCGCAGAGGCTCCAGTCTA  649
        ****************************************** *****

AM      TAATCCCAGGCTGAGATGGCCGAGATGGGAGAATTGCTTGAGCCCTGGAG  697
GI      TAATCCCAGGCTGAGATGGCCGAGATGGGAGAATTGCTTGAGCCCTGGAG  695
SY      TAATCCCAGGCTGAGATGGCCGAAATGGGAGAATTGCTTGAGCCCTGGAG  697
JM      TAATCCCAGGCTGAGATGGCCGAGATGGGAGAATTGCTTGAGCCCTGGAG  698
SH      TAATCCCAGGCTGAGACGGCCGAGATGGGAGAATTGCTTGAGCCCTGGAG  695
HE      TAATCCCAGGCTGAGATGGCCGAGATGGGAGAATTGCTTGAGCCCTGGAG  699
        ***************** ******* ***************************

AM      GTTCAGACCAACCTAGGCAGCATAGTGAGATCCCCCATCTCTACAAACAT  747
GI      GTTCAGACCAACCTAGGCAGCATAGTGAGATCCCCCATCTCTACAAACAT  747
SY      GTTCAGACCAACCTAGGCAGCATAGTGAGATCCCCCATCTCTACAAACAT  747
JM      GTTCAGACCAACCTAGGCAGCATAGTGAGATCCCCCATCTCTACAAACAT  748
SH      GTTCAGACCAACCTAGGCAGCATAGTGAGATCCCCCATCTCTACAAACAT  745
HE      GTTCAGACCAACCTAGGCAGCCTAGTGAGATCCCCCATCTCTACAAACAT  749
        ********************* ****************************

AM      TTAAAAAAATTAGTCAGGTGAAGTGGTGCATGGTGGTAGTCCCAGATATT  797
GI      TTAAAAAAATTAGTCAGGTGAAGTGGTGCATGGTGGTAGTCCCAGATATT  795
SY      TTAAAAAAATTAGTCAGGTGAAGTGGTGCATGGTGGTAGTCCCAGATATT  797
JM      TTAAAAAAATTAGTCAGGTGAAGTGGTGCATGGTGGTAGTCCCAGATATT  798
SH      TTAAAAAAATTAGTCAGGTGAAGTGGTGCATGGTGGTAGTCCCAGATATT  795
HE      TTAAAAAAATTAGTCAGGTGAAGTGGTGCATGGTGGTAGTCCCAGATATT  799
        ************************************************
```

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FIG.5E

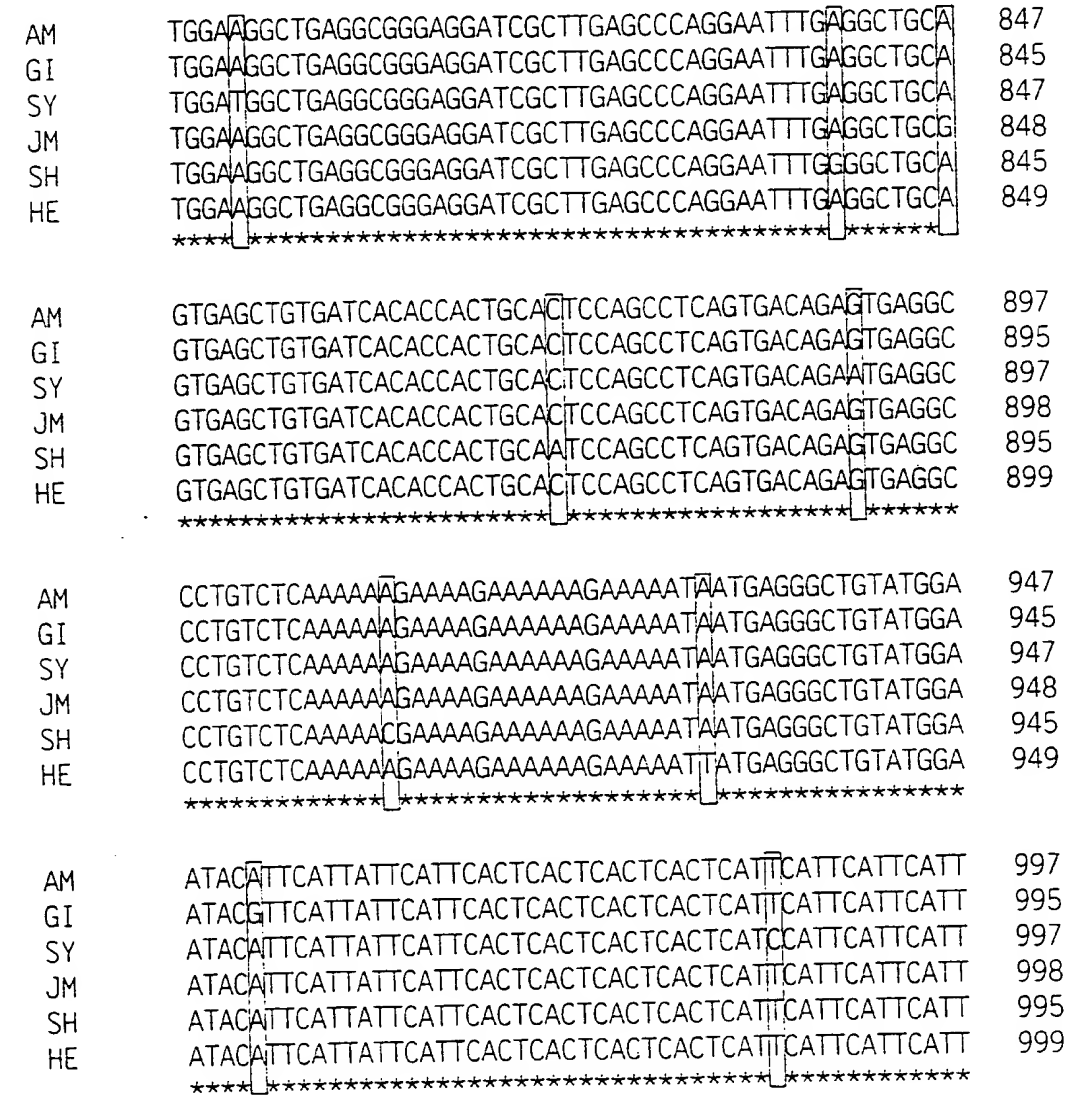
AM TGGAAGGCTGAGGCGGGAGGATCGCTTGAGCCCAGGAATTTGAGGCTGCA 847
GI TGGAAGGCTGAGGCGGGAGGATCGCTTGAGCCCAGGAATTTGAGGCTGCA 845
SY TGGATGGCTGAGGCGGGAGGATCGCTTGAGCCCAGGAATTTGAGGCTGCA 847
JM TGGAAGGCTGAGGCGGGAGGATCGCTTGAGCCCAGGAATTTGAGGCTGCG 848
SH TGGAAGGCTGAGGCGGGAGGATCGCTTGAGCCCAGGAATTTGGGGCTGCA 845
HE TGGAAGGCTGAGGCGGGAGGATCGCTTGAGCCCAGGAATTTGAGGCTGCA 849
AM GTGAGCTGTGATCACACCACTGCACTCCAGCCTCAGTGACAGAGTGAGGC 897
GI GTGAGCTGTGATCACACCACTGCACTCCAGCCTCAGTGACAGAGTGAGGC 895
SY GTGAGCTGTGATCACACCACTGCACTCCAGCCTCAGTGACAGAATGAGGC 897
JM GTGAGCTGTGATCACACCACTGCACTCCAGCCTCAGTGACAGAGTGAGGC 898
SH GTGAGCTGTGATCACACCACTGCAATCCAGCCTCAGTGACAGAGTGAGGC 895
HE GTGAGCTGTGATCACACCACTGCACTCCAGCCTCAGTGACAGAGTGAGGC 899
AM CCTGTCTCAAAAAAGAAAAGAAAAAAGAAAAATAAATGAGGGCTGTATGGA 947
GI CCTGTCTCAAAAAAGAAAAGAAAAAAGAAAAATAAATGAGGGCTGTATGGA 945
SY CCTGTCTCAAAAAAGAAAAGAAAAAAGAAAAATAAATGAGGGCTGTATGGA 947
JM CCTGTCTCAAAAAAGAAAAGAAAAAAGAAAAATAAATGAGGGCTGTATGGA 948
SH CCTGTCTCAAAAACGAAAAGAAAAAAGAAAAATAAATGAGGGCTGTATGGA 945
HE CCTGTCTCAAAAAAGAAAAGAAAAAAGAAAAATTTATGAGGGCTGTATGGA 949
AM ATACATTCATTATTCATTCACTCACTCACTCACTCATTCATTCATTCATT 997
GI ATACGTTCATTATTCATTCACTCACTCACTCACTCATTCATTCATTCATT 995
SY ATACATTCATTATTCATTCACTCACTCACTCACTCATCCATTCATTCATT 997
JM ATACATTCATTATTCATTCACTCACTCACTCACTCATTCATTCATTCATT 998
SH ATACATTCATTATTCATTCACTCACTCACTCACTCATTCATTCATTCATT 995
HE ATACATTCATTATTCATTCACTCACTCACTCACTCATTCATTCATTCATT 999

FIG.5F

```
AM      CATTCAACAAGTCTTATTGCATACCTTCTGTTTGCTCAGCTTGGTGCTTTG  1047
GI      CATTCAACATGTCTTATTGCATACCTTCTGTTTGCTCAGCTTGGTGCTTTG  1045
SY      CATTCAACAAGTCTTATTGCATACCTTCTGTTTGCTCAGCTTGGTGCTCG   1047
JM      CATTCAACAAGTCTTATTGCATACCTTCTGTTTGCTCAGCTTGGTGCTTTG  1048
SH      CATTCAACAAGTCTTATTGCATACCTTCTGTTTGCTCAGCTTGGTGCTTTG  1045
HE      CATTCAACAAGTCTTATTGCATACCTTCTGTTTGCTCAGCTTGGTGCTTTG  1049
        *********|****************************************|*

AM      GGGCTGCTGAGGGGCAGGAGGGAGAGGGTGACATGGGTCAGCTGACTCCC  1097
GI      GGGCTGCTGAGGGGCAGGAGGGAGAGGGTGACATCCCTCAGCTGACTCCC  1095
SY      GGGCTGCTGAGGGGCAGGAGGGAGAGGGTGACATGGGTCAGCTGACTCCC  1097
JM      GGGCTGCTGAGGGGCAGGAGGGTGAGGGTGACATGGGTCAGCTGACTCCC  1098
SH      GGCCTTCTGAGGGGCAGGAGGGAGAGGGTGACATGGGTCAGCTGACTCCC  1095
HE      GGGCTGCTGAGGGGCAGGAGGGAGAGGGTGACATGGGTCAACTGACTCCC  1099
        **|**|****************|***********|***|*********

AM      AGAGTCCACTCCCTGTAGGTCGGGCAGCAGGCCGTAGAAGTCTGGCAGGG  1147
GI      AGAGTCCACTCCCTGTAGGTCGGGCAGCAGGCCGTAGAAGTCTGGCAGGG  1145
SY      AGAGTCCACTCCCTGTAGGTCGGGCAACAGGCCGTAGAAGTCTGGCAGGG  1147
JM      AGAGTCCACTCCCTGTTGGTCGGGCAGCAGGCCGTAGAAGTCTGGCAGGG  1148
SH      AGAGTCCACTCCCTGTAGGTCGGGCAGCAGGCCGTAGAAGTCTGGCAGGG  1145
HE      AGAGTCCACTCCCTGTAGGTCGGGCAGCAGGCCGTAGAAGTCTGGCAGGG  1149
        ****************|*********|************************

AM      CCTGGCCCTGCTGTCGGAAGCTGTCCTGCGGGGCCAGGCCCTGTTGGTCA  1197
GI      CCTGGCCCTGCTGTCGGAAGCTGTCCTGCGGGGCCAGGCCCTGTTGGTCA  1195
SY      CCTGGCCCTGCTGTCGGAAGCTGTCCTGCGGGGCCAGGCCCTGTTGGTCA  1197
JM      CCTGGCCCTGCTGTCGGAAGCTGTCCTGCGGGGCCAGGCCCTGTTGGTCA  1198
SH      CCTGGCCCTGCTGTCGGAATCTGTCCTGCGGGGCCAGGCCCTGTTGGTCA  1195
HE      CCTGGCCCTGCTGTCGGAAGCTGTCCTGCGGGGCCAGGCCCTGTTGGTCA  1199
        ******************|*****************************
```

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FIG.5G

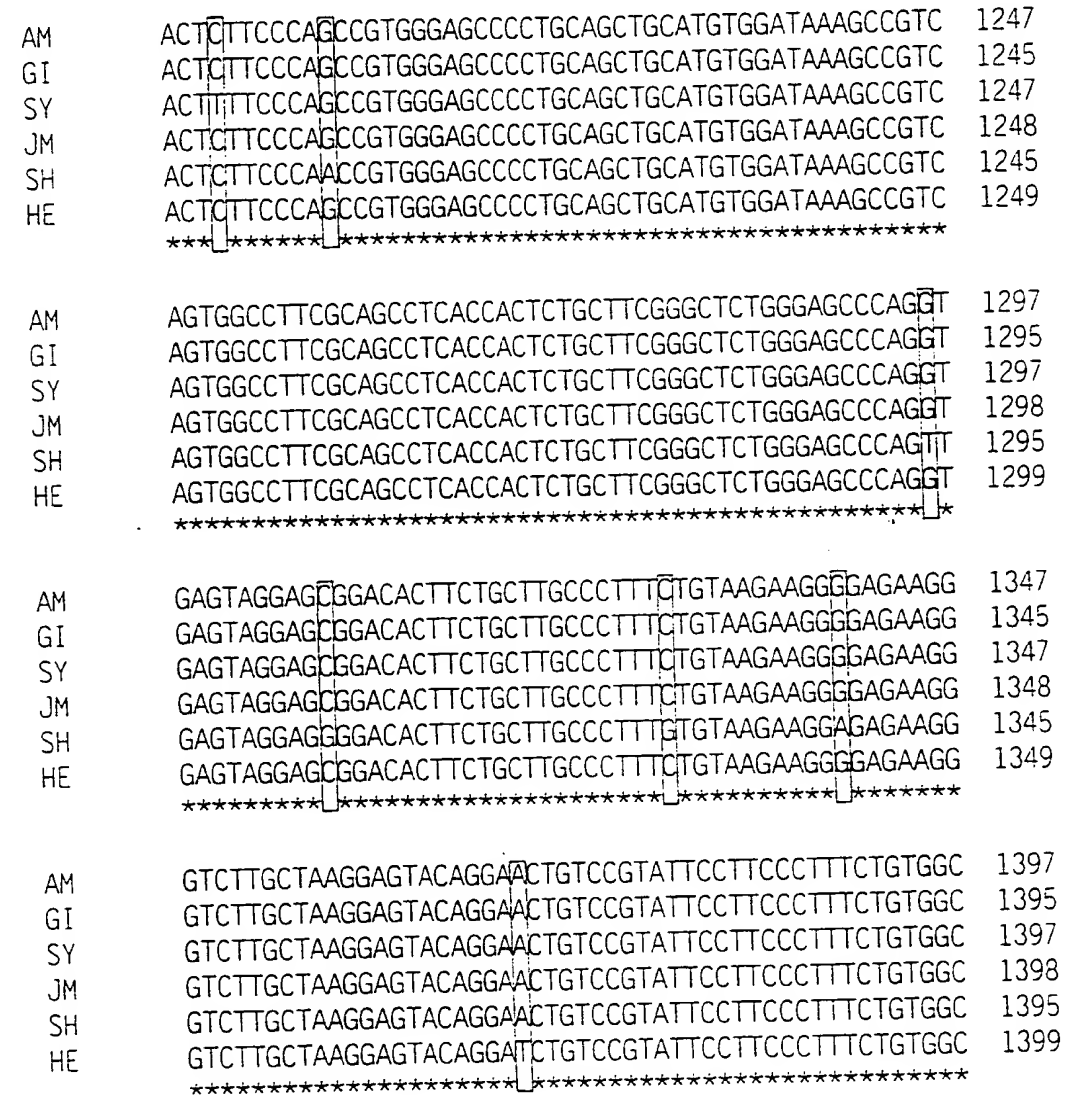

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FIG.5H

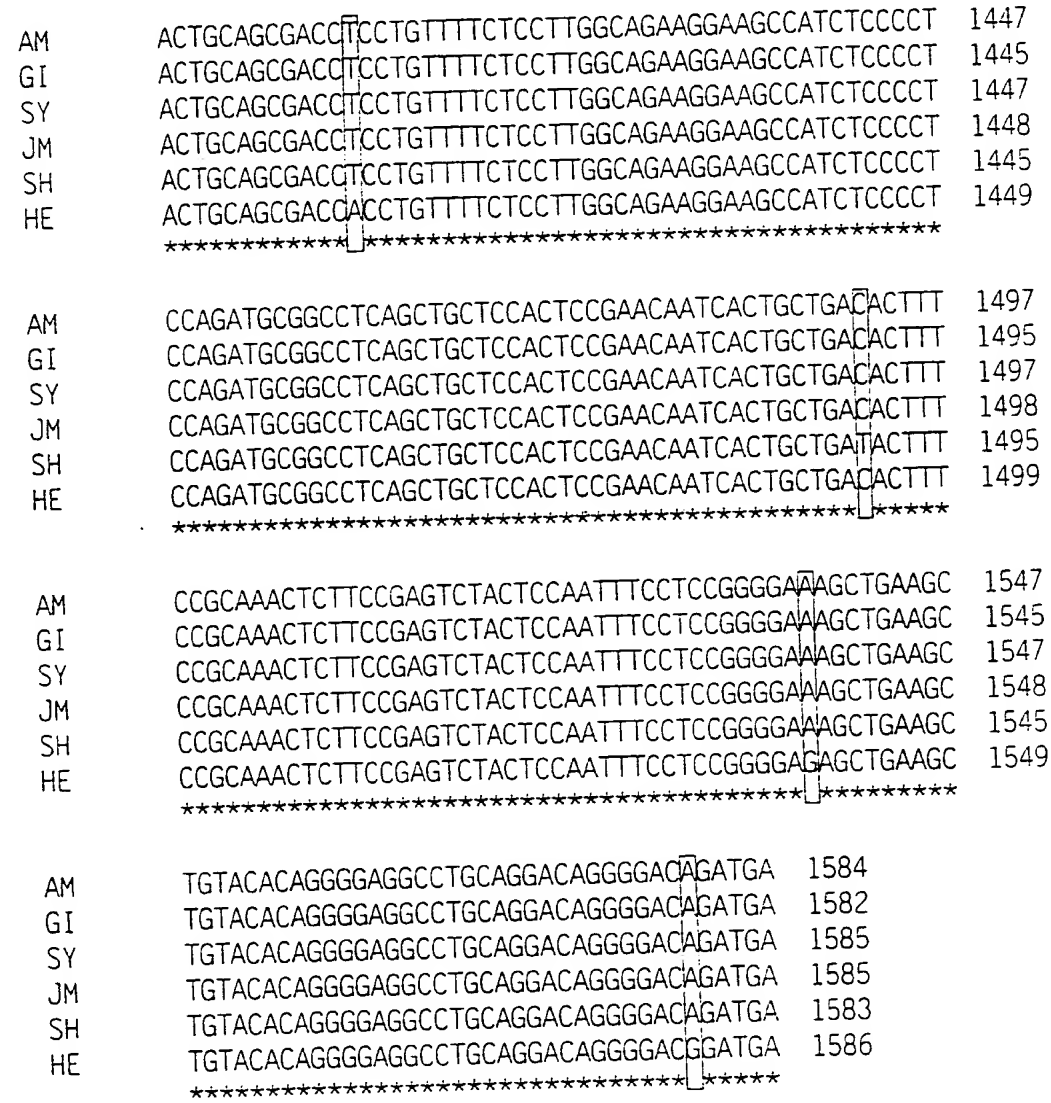

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FIG.6

```
AM/GI   MGVHECPAWLWLLLSLLSLPLGLPVLGAPPRLICDSRVLERYLLEAKEAE   50
SY      MGVHECPAWLWLLLSLLSLPLGLPVLGAPPRLICDSRVLERYLLEAKEAE   50
JM      MGVHECPAWLWLLLSLLSLPLGLPVLGAPPRLICDSRVLERYLLEAKEAE   50
SH      MGVHECPAWLWLLLSLLSLPLGLPVLGAPPRLICDRRVLERYLLEAKEAE   50
HE      MGVHECPAWLWLLLSLLSLPLGLPVLGAPPRLICDSRVLERYLLEAKEAE   50
        **********************************_**********

AM/GI   NITTTGCAEHCSLNENITVPDTKVNFYAWKRMEVGQQAVEVWQGLALLSEA  100
SY      NITTTGCAEHCSLNENITVPDTKVNFYAWKRMEVGQQAVEVWQGLALLSEA  100
JM      NITKTGCAEHCSLNENITVPDTKVNFYAWKRMEVGQQAVEVWQGLALLSEA  100
SH      NITTTGCAEHCSLNENITVPDTKVNFYAWKRMEVGQQAVEVWQGLALLSES  100
HE      NITTTGCAEHCSLNENITVPDTKVNFYAWKRMEVGQQAVEVWQGLALLSEA  100
        ***_**********************************************_

AM/GI   VLRGQALLVNSSQPWEPLQLHVDKAVSGLRSLTTLLRALGAQKEAISPPD  150
SY      VLRGQALLVNSSQPWEPLQLHVDKAVSGLRSLTTLLRALGAQKEAISPPD  150
JM      VLRGQALLVNSSQPWEPLQLHVDKAVSGLRSLTTLLRALGAQKEAISPPD  150
SH      VLRGQALLVNSSQPWEPLQLHVDKAVSGLRSLTTLLRALGAQKEAISPPD  150
HE      VLRGQALLVNSSQPWEPLQLHVDKAVSGLRSLTTLLRALGAQKEAISPPD  150
        **************************************************

AM/GI   AASAAPLRTITADTFRKLFRVYSNFLRGKLKLYTGEACRTGDR  193
SY      AASAAPLRTITADTFRKLFRVYSNFLRGKLKLYTGEACRTGDR  193
JM      AASAAPLRTITADTFRKLFRVYSNFLRGKLKLYTGEACRTGDR  193
SH      AASAAPLRTITADTFRKLFRVYSNFLRGKLKLYTGEACRTGDR  193
HE      AASAAPLRTITADTFRKLFRVYSNFLRGELKLYTGEACRTGDG  193
        **********************_*******_**************
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FIG.7

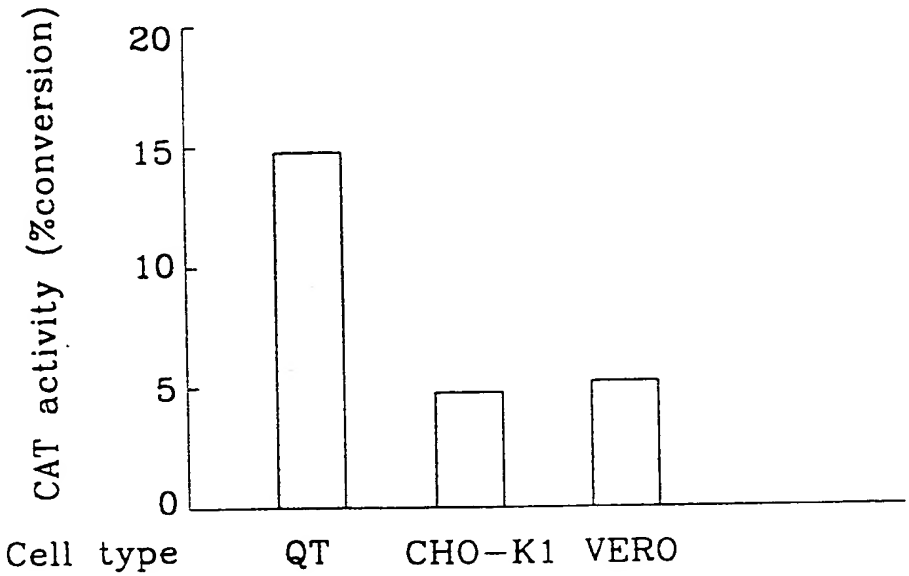

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FIG.8

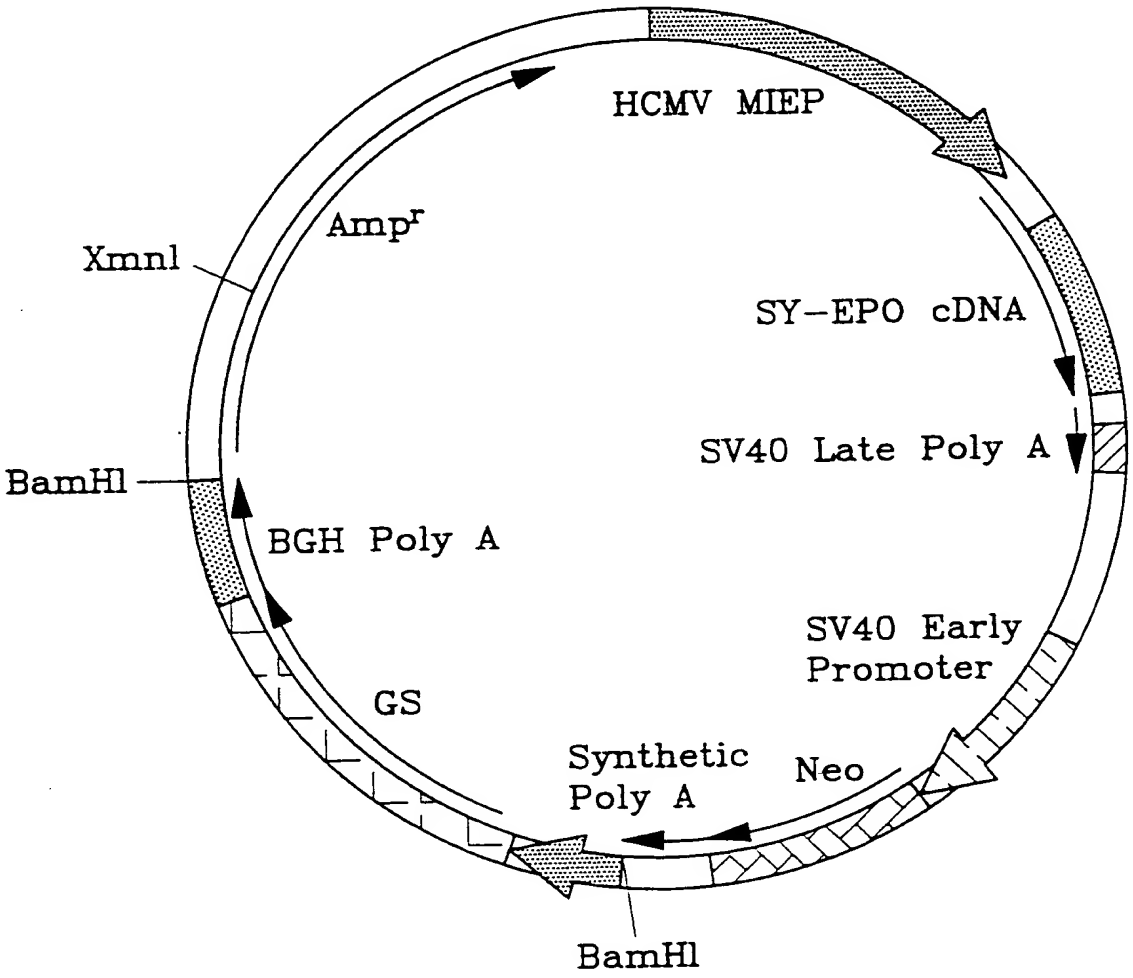

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FIG.9

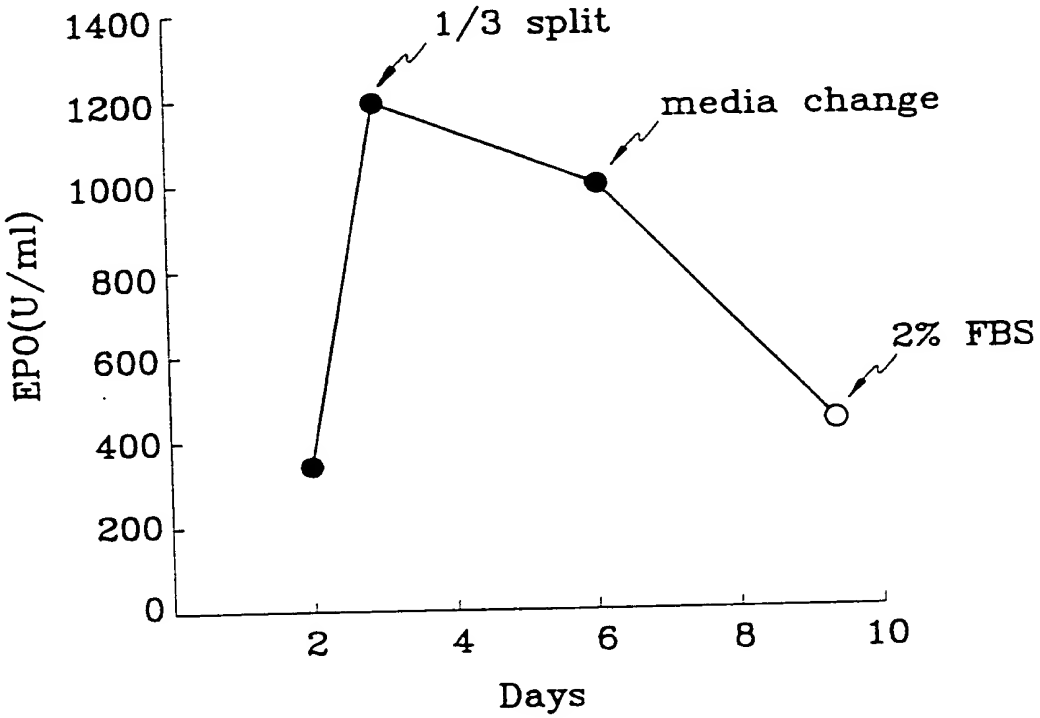

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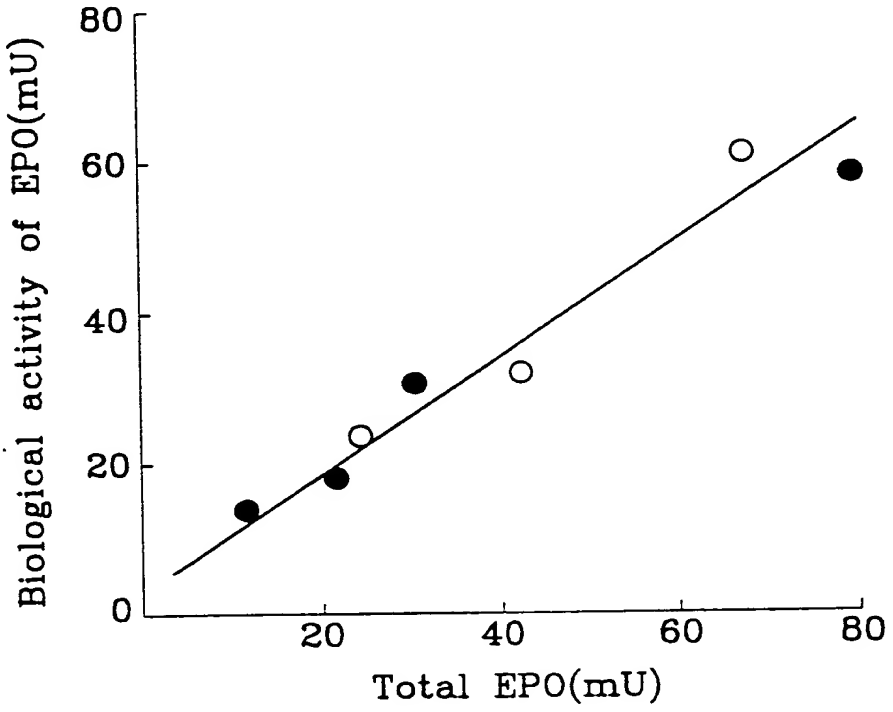
FIG.10



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